

ABSTRACT

A statistical switching method is described. The method involving computing tags from a packet to identify the flow a packet belongs to, looking up the tag in a table to provide switching information and using the switching information to switch the packet without analyzing the whole packet. If there is no entry for the flow based on the tag generated from the packet, the packet is sent to a router for further analysis. When the analysis is complete the switching information is provided to the table. If a packet which computes the same tag arrives at the switch before the router has finished analyzing the first packet of the flow, the new packet is dropped. The statistical switch has a non-zero probability of misdirecting a packet due to the possibility that two packets belonging to different flows may produce the same tag. The statistical switch provides high-speed switching and routing capabilities at low cost.